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TCS-6869/71
11 May 1971

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MEMORANDUM FOR: Chief, Technical Services Group, NPIC

ATTENTION : Chief, PPS/TSG

SUBJECT : RED Monthly Report (April 1971)

Significant Items of Interest for April 1971:

1. High Precision Stereo Comparator (HPSC) - All of the components of the HPSC have arrived at NPIC. The instrument is currently being assembled in the specially prepared clean room. Installation will be completed early in June.

2. Roomlight Enlarger/Reader/Printer - Preacceptance tests were carried out at the [REDACTED] during the week of 26 April 1971. This instrument (which utilizes dry silver paper) will arrive in NPIC during May.

3. Research in Mensuration Instruments - Most of the work funded in FY-1970 has been completed. Final reports have been received on several of the tasks and the color mensuration task final report is expected shortly. Work still remains to be done on the reticle task. The FY-1971 program has been approved and the contracting officer is presently negotiating a new contract.

4. Dry Silver Materials Program - The operational imagery reproduced on the latest batch of negative acting dry silver material arrived at NPIC. This is being evaluated in IEG and TSG/APSD. Reports from the processing site indicate that the resolution achieved compares favorably with the present reproduction wet-process material.

5. UV Rear Projection Breadboard - This device arrived in the Washington area on 26 April. Arrangements are underway to install and evaluate this experimental device at a selected contractor's facility.

6. Tracking Light Source for the [REDACTED] Table - This project was approved during the last week of April. Contract negotiations are expected to take place in May.

7. Dry Silver Color Program - [REDACTED] reports that the progress on this program is very encouraging. To date, [REDACTED] has been able to produce two of the three color layers.

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25X1A 8. Simulated Imagery Program - This program is in a hold status again. The [REDACTED] Plotter is "down" for repairs and the simulated imagery plots cannot be checked out until the plotter is back in operation.

9. Twin Stage Stereo Comparator - [REDACTED] has completed permanent fixes to the optics on this instrument and full travel can now be achieved throughout the entire focus range. This instrument has been installed in IAS.

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10. Measurement of Threshold Targets Through Microdensitometry - The final report has been received on this RADC-funded contract. RED helped coordinate and monitor this program and other NPIC components provided support.

11. 10" x 10" Stereocomparator - [REDACTED] reports that all the optical parts have been received from the vendors. They now expect to complete the instrument by the end of June 1971.

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12. Automatic Stereo Scanner - The [REDACTED] engineering audit review has been completed and recommendations relative to future actions will be presented in early May.

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[REDACTED]

14. Wide-Field, High-Power, Anamorphic Stereoviewer - Additional funds have been approved to complete milestones two and three of Phase 2.

15. Target Indexing Device - Numerous program changes and film transport improvements were made. The instrument is now essentially ready for operational evaluation testing.

16. Optical Power Spectrum (OPS) as a Measure of Image Quality - Phase II - The initial OPS image quality tests using the T.I.D. detector were successful. Measurements on new test imagery (including EOI) have been made though the data analysis has not been completed. This phase is on schedule and will be completed in June 1971. A detailed final report covering Phase I and II will be published in July 1971.

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18. Optical Image Manipulation - The first year of this work of this work is complete and the final report has been received. Examples of OIM applied to laboratory and operational imagery are included in the report; the results are promising. The second year of the project began in April. It will concentrate on testing a greater variety of OIM filters on operational imagery and on building a prototype interactive OIM viewer with which the P.I. can improve an image while viewing it. This viewer will be tested in August 1971.

25X1A 19. [REDACTED] Advanced Viewing System Requirements - The first of three reports establishing the basic definition of PI tasks and the requirements that should be met by his equipment in light of these tasks has been submitted. The document is entitled, "Advanced Viewing System Requirements," and is in the process of being distributed throughout the Center.

20. Imagery Interpretation Research Program Review - A program review was presented to C/IEG and C/SS during the reporting period.

25X1A 21. ICM Support [REDACTED] - A contractor representative accompanied the Project Officer to [REDACTED] to develop a human factors evaluation plan for the Image Comparison Microstereoscope. In-house efforts are also underway to establish a schedule for evaluation of the instrument upon its arrival in the Center late this summer.

25X1A 22. Stereo Acuity Test Development [REDACTED] [REDACTED] HPS/ATB consultant at [REDACTED] has begun a large-scale testing of the final version of [REDACTED] CL Stereo Test. A prototype of the test was recently employed in the Center's Stereo Acuity Test Program. The test is intended to assess the stereo acuity of photo interpreters and others who might employ high-power, stereo, magnification devices, and is appropriate for T&E of such optical instruments.

23. Subjective Color Image Quality Assessment Program Postponement - The proposed program was deleted from the FY-71 R&D program pending further study by APSD.

25X1A 24. Psychological Services Staff/HPS Personnel Test Evaluation - PSS and HPS recently evaluated the effect of sex, military background, and education on the Army Imagery Interpretation Test Battery. Further evaluation is being conducted based upon IEG's comments on the report.

25X1A 25. [REDACTED] assisted [REDACTED] by conducting an analysis of variance for a PI-related experiment.

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26. [REDACTED] commenced work on two work orders: Color Image Reconstruction, and [REDACTED] Tintometer Evaluation. [REDACTED] was given two additional color training documents to edit.

27. Two tasks under Contract [REDACTED] have been authorized during this reporting period covering these program areas: Color, State-of-the-Art Review, and Sensitometric Test and Evaluation (Phase I). These two programs are part of overall color materials and standard evaluation program.

29. Evaluations:

- a. Emulsion Evaluation Support - HFS/ATB personnel and the [REDACTED] continued its support to APSD in its program to evaluate the relative merits of a series of B&W dupe stocks. Support consisted primarily of experimental design, generation of EEI's, and statistical analysis of the pilot study conducted with the cooperation of IEG. The experimental design was briefed to the Chief, AFSPPF, and several staff members on 12 April by an HFS representative. The program is delayed by failure to deliver one of the duping materials.
- b. [REDACTED] GOB Study Evaluation - The Special Activities Division (SPAD), U.S. Army, is conducting an intensive evaluation of the final report from the FY-70 [REDACTED] contract (Classification and Identification of Ground Order-of-Battle Targets as a Function of Photographic Ground Resolution). The evaluation is in support of HFS/ATB's efforts to recommend an award fee for the contract. SPAD personnel acted as subjects in the study.
- c. [REDACTED] - Evaluation of Technical Documents - Draft copies of two reports from the FY-71 "Training Needs Associated with Color Photography" contract with [REDACTED] were received and submitted to IEG, TSG, and PSG for review. They are entitled, "A Recommended Color Vocabulary for Use in the Exploitation of Color Imagery" and "A Glossary for Color Aerial Reconnaissance."

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30. Meetings, Briefings, etc.

- 25X1A a. [REDACTED] coordinated MC&G efforts to give a "Color Symposium" at Headquarters auditorium. The symposium was cancelled because of planned demonstrations.
- 25X1A b. [REDACTED] attended the Tactical Reconnaissance and Surveillance Symposium sponsored by the Office of the Director, DR&E/DoD on 13-15 April 1971 as one of two NPIC representatives.
- 25X1A c. [REDACTED] attended the software meetings at [REDACTED] and the hardware meetings at [REDACTED] 25X1A 25X1A
- 25X1A d. [REDACTED] attended the [REDACTED] meetings at [REDACTED] 25X1A 25X1A He also attended the MC&G symposiums at ACIC and Topeka, Kansas.
- 25X1A e. [REDACTED] visited [REDACTED] 25X1A 14-16 April, where acceptance tests were conducted and final acceptance of the sensitometric processor was made. The processor will be in EL/ATB within the next three weeks.
- 25X1A f. [REDACTED] attended the Forecasting 70's Symposium and the annual SPSE conference in Chicago the week of 19-23 April 1971.
- 25X1A g. [REDACTED] attended the 40th Annual Meeting of the Inter-Society Color Council in New York.
- 25X1A h. [REDACTED] completed the one-week Advanced Imagery Interpretation Orientation Course at Offutt Air Force Base, 5-9 April.
- 25X1A i. [REDACTED] attended the SPSE Photo Exposition in Chicago, Ill., during 21-23 April.
- 25X1A j. [REDACTED] on the proposed Compact High Speed Dry Silver Processor on 21 April 1971.
- 25X1A k. [REDACTED] briefed OSP on the Dry Silver Development Program on 21 April.

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31. Personnel:

25X1A [REDACTED] reported for duty on 5 April 1971; he
is assigned to SDB/RED.

[REDACTED]
Deputy Chief,
Research & Engineering Division,
TSG/NPIC

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